Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of providing ~~improved~~ real time kinematics determination in positioning equipment, comprising ~~the steps of~~:

determining a first ~~position~~ measurement ~~estimate~~ using a first received signal and a second measurement using a second~~an other~~ received signal;

~~enhancing ambiguity resolution of the first position estimate by~~ decorrelating ~~a first~~the first and second measurement ~~based on the received signal and the other received signal, respectively~~; and

deriving a ~~second~~ position ~~estimate~~ based on the ~~enhanced ambiguity resolution~~decorrelated first and second measurements;

wherein the first and second measurements are decorrelated using the function:

$$\tilde{V}_2 = \tilde{H}_2 X + \tilde{L}_2 ;$$

thereby providing an output that improves real time kinematics determination in positioning equipment.

2. (Original) The method as claimed in claim 1, wherein the received signals are GPS signals.

3. (Original) The method as claimed in claim 1, wherein the received signals are signals received by a GPS receiver.

4. (Canceled).

5. (Currently Amended) The method as claimed in ~~claim 4~~claim 1, wherein $\tilde{L}_2 = L_2 - \alpha L_1$, $\tilde{H}_2 = H_2 - \alpha H_1$, and

$$\tilde{D}_2 = (R_{L2}^2 + \alpha^2 R_{L1}^2 - 2\alpha R_{L1,L2}) \begin{bmatrix} W_1 + W_{ref} & W_{ref} & \cdots & W_{ref} & W_{ref} \\ W_{ref} & W_2 & \cdots & W_{ref} & W_{ref} \\ \vdots & \vdots & \ddots & \vdots & \vdots \\ W_{ref} & W_{ref} & \cdots & W_{n-2} + W_{ref} & W_{ref} \\ W_{ref} & W_{ref} & \cdots & W_{ref} & W_{n-1} + W_{ref} \end{bmatrix}$$

6. (Original) The method as claimed in claim 1, wherein the first and second measurements are decorrelated using a coefficient determined by the function:

$$\alpha = \begin{cases} 1 \\ \lambda_1/\lambda_2 \\ \lambda_2/\lambda_1 \\ 0 \\ R_{L1,L2}/R_{L1}^2 \end{cases}$$

7. (Currently Amended) The method as claimed in claim 1, further comprising using ~~wherein~~ at least one of a ratio smoothing function and an ambiguity stability function ~~are used~~ if a baseline is 10 kilometers or greater.

8. (Original) The method as claimed in claim 7, wherein the ratio smoothing function is:

$\tilde{R}atio = Ratio + \tilde{R}atio * (N-1)/N$ where N is the width of the moving window.

9 (Currently Amended) The method as claimed in claim 7, wherein the ambiguity stability function ~~includes the steps of~~comprises:

incrementing a counter for each epoch in which double differenced ambiguities remain the same; and

~~if the double differenced ambiguities are not zero and less than 50 epochs are counted,~~ resetting the counter if the double differenced ambiguities are not zero and less than 50 epochs are counted.

10. (Currently Amended) A computer readable medium comprising:

at least one sequence of machine executable instructions in machine form, wherein execution of the instructions by a processor cause the processor to:

determine a first ~~position estimate~~measurement using a first received signal and ~~an other~~a second measurement using a second received signal;

~~enhance ambiguity resolution of the first position estimate by decorrelating a~~decorrelate the first and second ~~measurement~~ measurements~~based on the received signal and the other received signal, respectively~~, wherein the first and second measurements are decorrelated using the function:

$\tilde{V}_2 = \tilde{H}_2 X + \tilde{L}_2$; and

derive a ~~second~~ position ~~estimate~~ based on the ~~enhanced ambiguity resolution~~decorrelated measurements;

thereby providing an output that improves real time kinematics determination in positioning equipment.

11. (Original) The medium as claimed in claim 10, wherein the received signals are GPS signals.

12. (Original) The medium as claimed in claim 10, wherein the received signals are received by a GPS receiver.

13. (Canceled).

14. (Currently Amended) The medium as claimed in ~~claim 13~~claim 10, wherein $\tilde{L}_2 = L_2 - \alpha L_1$, $\tilde{H}_2 = H_2 - \alpha H_1$, and

$$\tilde{D}_2 = (R_{L2}^2 + \alpha^2 R_{L1}^2 - 2\alpha R_{L1,L2}) \begin{bmatrix} W_1 + W_{ref} & W_{ref} & \cdots & W_{ref} & W_{ref} \\ W_{ref} & W_2 & \cdots & W_{ref} & W_{ref} \\ \vdots & \vdots & \ddots & \vdots & \vdots \\ W_{ref} & W_{ref} & \cdots & W_{n-2} + W_{ref} & W_{ref} \\ W_{ref} & W_{ref} & \cdots & W_{ref} & W_{n-1} + W_{ref} \end{bmatrix}$$

15. (Currently Amended) The medium as claimed in ~~claim 9~~claim 10, wherein the first and second measurements are decorrelated using a coefficient determined by the function:

$$\alpha = \begin{cases} 1 \\ \lambda_1/\lambda_2 \\ \lambda_2/\lambda_1 \\ 0 \\ R_{L1,L2}/R_{L1}^2 \end{cases}$$

16. (Currently Amended) The ~~method as claimed in claim 9~~medium as claimed in claim 10, further comprising ~~, wherein~~ at least one of a ratio smoothing function and an ambiguity stability function ~~are used~~ if a baseline is 10 kilometers or greater.

17. (Currently Amended) The ~~method~~ medium as claimed in claim 16, wherein the ratio smoothing function is:

$\tilde{R}atio = Ratio + \tilde{R}atio * (N-1)/N$ where N is the width of the moving window.

18. (Currently Amended) The ~~method~~ medium as claimed in claim 16, wherein the ambiguity stability function includes additional instructions which, when executed by the processor, cause the processor to:

increment a counter for each epoch in which double differenced ambiguities remain the same; and

reset the counter if the double differenced ambiguities are not zero and less than 50 epochs are counted~~, reset the counter~~.

19. (Currently Amended) An apparatus for providing ~~improved,~~ real time kinematics determination, the apparatus comprising:

determining means for determining a first ~~position estimate~~measurement using a received signal and ~~an other~~a second received signal;

~~enhancing~~ decorrelating means for ~~enhancing ambiguity resolution of the first position estimate by~~ decorrelating ~~a first~~the first and second ~~measurement~~ measurements~~based on the received signal and the other received signal, respectively~~; and

deriving means for deriving a ~~second~~ position estimate based on the ~~enhanced ambiguity resolution~~decorrelated measurements;

wherein the decorrelated means includes means for implementing the function:

$$\tilde{V}_2 = \tilde{H}_2 X + \tilde{L}_2 .$$

20. (Original) The apparatus as claimed in claim 19, wherein the received signals are GPS signals.

21. (Original) The apparatus as claimed in claim 19, wherein the received signals are received by a GPS receiver.

22. (Canceled).

23. (Currently Amended) The apparatus as claimed in ~~claim 22~~claim 19, wherein

$$\tilde{L}_2 = L_2 - \alpha L_1, \qquad \tilde{H}_2 = H_2 - \alpha H_1, \qquad \text{and}$$

$$\tilde{D}_2 = (R_{L2}^2 + \alpha^2 R_{L1}^2 - 2\alpha R_{L1,L2}) \begin{bmatrix} W_1 + W_{ref} & W_{ref} & \cdots & W_{ref} & W_{ref} \\ W_{ref} & W_2 & \cdots & W_{ref} & W_{ref} \\ \vdots & \vdots & \ddots & \vdots & \vdots \\ W_{ref} & W_{ref} & \cdots & W_{n-2} + W_{ref} & W_{ref} \\ W_{ref} & W_{ref} & \cdots & W_{ref} & W_{n-1} + W_{ref} \end{bmatrix}$$

24. (Original) The apparatus as claimed in claim 19, wherein the first and second measurements are decorrelated using a coefficient determined by the function:

$$\alpha = \begin{cases} 1 \\ \lambda_1/\lambda_2 \\ \lambda_2/\lambda_1 \\ 0 \\ R_{L1,L2}/R_{L1}^2 \end{cases}$$

25. (Original) The apparatus as claimed in claim 19, wherein at least one of a ratio smoothing function and an ambiguity stability function are used if a baseline is 10 kilometers or greater.

26. (Original) The apparatus as claimed in claim 25, wherein the ratio smoothing function is:

$\tilde{R}atio = Ratio + \tilde{R}atio * (N-1)/N$ where N is the width of the moving window.

27. (Original) The apparatus as claimed in claim 25, wherein the ambiguity stability function further includes:

incrementing means for incrementing a counter for each epoch in which double differenced ambiguities remain the same; and

resetting means for resetting the counter if the double differenced ambiguities are not zero and less than 50 epochs are counted.